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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,306	10/25/2000	Seiji Umemoto	Q61458	1186

7590

05/06/2003

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EXAMINER

CHOI, JACOB Y

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/695,306

Applicant(s)

UMEMOTO, SEIJI

Examiner

Jacob Y Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2-4, 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sonehara (USPN 4,870,484).

Regarding claim 1, Sonehara discloses a light pipe including an upper surface (upper surface of the light guide plate, 8), a lower surface (bottom surface of the light guide plate, 8), and an incidence side surface (side surface of the light guide plate where the linear light source is against), and including a light output means (9) formed in the upper surface so that light incident on the incidence side surface exits from the lower surface through the light output means while light incident on the lower surface is transmitted through the upper surface (figures 1A, 1B, 9A, 9D, 9B, 9C, 11, & 12), and a linear light source (7) disposed on the incidence side surface of the light pipe, the linear light source having an effective light emission region which is longer than a longitudinal length of the incidence side surface (figure 9A), whereby information light (LCD) generated on the lower surface of the light pipe is transmitted and made visible through the upper surface of the light pipe.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 9 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonehara (USPN 4,870,484) in view of Yamamoto et al. (USPN 5,341,231).

Regarding claim 5, Sonehara discloses claimed invention, explained above. In addition, Sonehara discloses a liquid-crystal cell disposed on an upper surface of the plane light source unit. Sonehara discloses claimed invention except for the specific location of the liquid-crystal cell including a reflection layer. Yamamoto et al. teaches that it is known to locate a liquid-crystal cell (72) disposed on a lower surface (Figure 10) of the plane light source unit, where the liquid-crystal cell including a reflection layer (68 or 3 of Sonehara). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a plane light source unit of Sonehara with a liquid-crystal cell including a reflector, located at a lower surface of the plane light source unit, as taught by Yamamoto et al. in order for a reflective type liquid crystal display device to make a bright display (column 3 & 4, lines 55-5 of Sonehara). In addition, it has been held that rearranging parts of an invention involves routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claim 9, Sonehara discloses the information light on the upper surface of the light pipe is constituted by an image (LCD) and the image is visibly transmitted

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and made visible through the upper surface of the light pipe. Sonehara discloses claimed invention except for the specific location of the liquid-crystal cell. Yamamoto et al. teaches that it is known to locate a liquid-crystal cell (72) disposed on a lower surface (Figure 10) of the plane light source unit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a plane light source unit of Sonehara with a liquid-crystal cell, located at a lower surface of the plane light source unit, as taught by Yamamoto et al. in order for a reflective type liquid crystal display device to make a bright display (column 3 & 4, lines 55-5 of Sonehara). In addition, it has been held that rearranging parts of an invention involves routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claim 10, Sonehara in view of Yamamoto et al. discloses the claimed invention, explained above. In addition, mentioned references disclose a liquid crystal cell provides the image, which is provided separately from the light pipe.

Allowable Subject Matter

5. Claims 2, 3, 4, 6, 7 & 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims recite a specific detail structure of a plane light source unit comprising the light output means of the light pipe has a repetitive structure of prisms-like irregularities arranged at intervals of a pitch in a range of from 50 μ m to 1 mm, each of

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the prism-like irregularities being constituted by a combination of a short side surface and a long side surface, the short side surface is made of a slope inclined down from the incidence the surface toward an end side opposite to the incidence side surface at an inclination angle in a range of from 30 to 45 degrees with respect to a reference plane of the lower surface, and the long side surface is made of a slope having an inclination angle in a range of from 0-10 degrees with respect to the reference plane, so that a difference between the inclination angle is not larger than 5 degrees as a whole, the difference between the inclination angle of adjacent long side surfaces is not larger than 1 degree, and a projected area of the long side surface on the reference plane is not smaller than five times as large as that of the short side surface. Because none of the reference disclosed the combination of a linear light source having an effective light emission region, which is longer than a longitudinal length of the incidence side surface with a detailed structure of the light pipe, nor is there any motivation to combine them, the claims deemed patentable over the prior art of record.

Response to Arguments

6. Applicant's arguments filed 11/07/2002 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *the image formed under the light pipe (with LCD panel) is visibly transmitted*

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through the upper surface of the light pipe so as to be served in a front-light type device) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Reference Sonehara clearly discloses that a light pipe including an upper surface, and an incidence side surface, and including a light output means (9) formed in the upper surface so that light incident on the incidence side surface exits from the lower surface through the light output means while light incident on the lower surface is transmitted through the upper surface.

Response to Amendment

7. Examiner acknowledges that the applicant has amended claims 1 & 2 and newly added claims 9 & 10. Now, claims 1-10 are pending in this application.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y Choi whose telephone number is (703) 308-4792. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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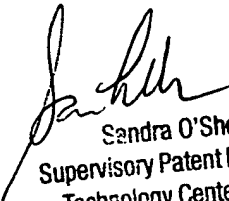
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872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-7724.

JC
April 30, 2003


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800